fessor has done anthropologists a great service by bringing together and systematising all recent investigations concerning the origin and nature of modern races of mankind. He regards the human race not as an "ideal" species—one composed of a predominant single variety: it would become so if one race prevailed and exterminated all the others—but as a collective species comprising many varieties of equal value in the eye of the classifier. His classification of modern races is a very practical one.

(4) We have kept the most important of the four books here reviewed to the last—for there can be no doubt, from every point of view, that Prof. Eugen Fischer's book merits such commendation. What happens when two diverse races of mankind interbreed throughout a long series of generations? Is a new race of mankind thus produced—a race which will continue to reproduce characters intermediate to those of the parent stocks? At the present time such an opinion is tacitly accepted by most anthropologists. It was to test the truth of such an opinion that Dr. Eugen Fischer, professor of anthropology at Freiburg, with financial assistance from the Royal Academy of Sciences of Berlin, set out to investigate the Bastard people in the Rehoboth district of German South-West Africa. The Rehoboth Bastards form a community of 2500–3000 souls, and are the result of intermarriage between early Boer farmers and Hottentot women—an intermixture which began more than a century ago.

This book contains the results of Prof. Fischer's investigations and is a model for those who will follow in his footsteps. His observations have convinced him that a new and permanent human race cannot be formed by the amalgamation of two diverse forms of man—not from any want of fertility—for amongst the Bastards there is an average of 7·4 children to each family—but because certain characters are recessive, others are dominant, and the original types tend to reassert themselves in the course of generations, according to Mendel's law. Although the mean head-form of the Bastards is intermediate to those of the two parent races—Hottentot and Boer—yet in each generation a definite number of the Bastards tend to assume the head-form of the one or of the other of the parent races. There are certain facts relating to head-form known to English anthropologists which can be explained only on a Mendelian basis and are in harmony with Dr. Fischer's observations. Between three and four thousand years ago England was invaded by a race with peculiarly formed, short and high heads. During those thousands of years the Bronze age invaders have been mingling their blood with that of the older and newer residents of England. Yet in every gathering of modern Englishmen—especially of the middle classes—one can see a number of pure examples of the Bronze age head-form. On the Mendelian hypothesis the persistence of such a head-form is explicable.

Dr. Eugen Fischer's study of the Rehoboth Bastards will be welcomed by all students of heredity. No race has so many peculiar human traits as the Hottentots, and hence the laws of human inheritance—as Prof. Fischer was the first to recognise—can be advantageously studied in their hybrid progeny.

"FLORAS" AND PLANT MONOGRAPHS.

(1) *A Manual Flora of Egypt.* By Dr. Reno Muschler. With a preface by Prof. Paul Ascherson and Prof. Georg Schweinfurth. Two volumes. Pp. xii + 1312. (Berlin: R. Friedländer und Sohn, 1912.)

(2) *Bush Days.* By Amy E. Mack. With illustrations from photographs by J. Ramsay and L. Harrison. Pp. xii + 132. (Sydney: Angus and Robertson, Ltd.; London: Australian Book Company, 1911.) Price 3*s*. 6*d*. net.

(3) *The Flora of Bristol: Being an account of all the Flowering Plants, Ferns, and their Allies that have at any time been found in the district of the Bristol Coal-Fields.* By J. W. White. Pp. ix + 722 + 3 plates + map. (Bristol: John Wright & Sons, Ltd.; London: Simpkin, Marshall and Co., Ltd., 1912.) Price 13*s*. 6*d*. net.

(4) *Pflanzengeographische Monographie des Berninagebietes.* By Dr. E. Rübel. Pp. x + 615 + xxxvi plates. (Leipzig: W. Engelmann, 1912.) Price 8 marks.

(5) *Das Pflanzenreich: Regni vegetabilis conspectus.* Herausgegeben von A. Engler. 53 Heft. iv. 129. Geraniaceæ. By R. Knuth. Pp. 640. Price 32 marks. 54 Heft. iv. 277 u. 277*a*. Goodeniaceæ und Brunoniaceæ. By K. Krause. Pp. 207 + 6. (Leipzig: W. Engelmann, 1912.) Price 10.80 marks.

(1) DR. MUSCHLER'S "Flora of Egypt" has grown from the work of Ascherson and Schweinfurth, whose "Illustration de la flora d'Egypte," published in 1887, was the first modern account of the vegetation of the country. In this work 1215 species were enumerated, and the number was increased in a supplement, issued two years later, to 1316. In the preparation of the present work, Dr. Muschler has had the advantage of the unpublished additional notes by the two veteran workers and also the use of their extensive herbarium. The number of species (of flowering plants and ferns) is brought up to 1505.

which, however, includes about 180 cultivated plants.

The work is in English and comprises adequate descriptions of the families, genera, species, and varieties; the systematic arrangement is that of Engler's Syllabus. Under each species references are given to relevant synonymy, and the distribution in the area under consideration is worked out in detail. About one-third of the second volume is occupied by a series of appendixes, including (1) a brief account of botanical work in Egypt; (2) a phytogeographical subdivision of the area into five districts—Mediterranean, Nile-delta, Oases of the Libyan Desert, Desert region, and Red Sea region; (3) a tabulated list of all the species and their distribution in these districts; (4) a similar table showing the distribution of Egyptian species in the Mediterranean basin; (5) a list of the commoner cultivated and garden plants; (6) a glossary; and (7) a list of Arabian names. The "Flora" forms a useful working handbook to the plants of Lower Egypt, and will be much valued by those interested in the botany of this ancient land.

(2) Miss Mack's "Bush Days" is a readable little volume consisting of short chapters on the plants and birds, and their habitats, which are still to be found within easy reach of Sydney. The letterpress is illustrated by numerous well-executed photographic reproductions, and the book, though obviously written for the author's near neighbours, may be read with interest and profit by lovers of nature in other parts of the world.

(3) Mr. White's "Flora of Bristol," described as "the outcome of an ideal hobby, cultivated in the spare moments of a business career," is a good example of a modern local flora. As no descriptions of genera and species are given, it must be used in association with a general "British Flora," but it is rich in critical notes on the plants and their occurrence within the limits of the area under consideration. Full details of habitat are given—a circumstance which will, it is hoped, not lead to the extinction of some of the rarer forms by greedy or over-zealous collectors. 1138 flowering plants are recorded as native or colonists, and a number of aliens are also included in smaller type. Ferns and Characeæ bring the total up to 1178. The number is likely to decrease, as some of the rarer plants are noted as less common than formerly and as extinct in former localities. Mr. White mentions 193 species as rare or local and 218 as very rare. Three, formerly native, are now extinct, namely, sea-kale (*Crambe maritima*), the rare galingale (*Cyperus longus*), which, formerly abundant in a single locality, has been exterminated by draining and cultivating, and a sedge (*Carex Davalliana*), found a century ago near Bath, but long since destroyed by drainage. The last species is of interest as having supplied the figured specimen for "English Botany."

In addition to the systematic portion, Mr. White gives a valuable introduction, including notes on the geology of the district and an analysis of the flora in relation to the different geological areas. There is also an interesting history of Bristol botany, with biographical notices of botanists, from William Turner, the father of English botany, who as Dean of Wells spent some years in the district, onwards to recent workers.

(4) Botanists who have visited the Engadine will turn with interest to Dr. Rübel's exhaustive account of the plant-geography of the Bernina district. The author is a pupil of Dr. Schröter, and his book is a tribute to the well-known zeal of his teacher in the ecological study of the botany of the Swiss Alps. Factors of climate, soil, and position are studied in detail, and a useful account is given of the various plant-formations. There is also a complete flora of the district, including flowering plants and cryptogams, in the elaboration of which Dr. Rübel has had the help of specialists in the various groups. A notable feature of the book are the beautiful photographic reproductions; and there is also an excellent folding map.

(5) Dr. R. Knuth's contribution to "Das Pflanzenreich"— a monograph of the Geraniaceæ—is one of the most important of this series. It is of interest to the horticulturist as well as to the botanist, as it includes an elaborate account of the hybrids of the genus Pelargonium, the source of the so-called geraniums and zonal pelargoniums of our gardens. The plan of the volume is similar to that of the other monographs of the series—a general account of the vegetative and floral morphology and the distribution of the family, followed by a detailed systematic description of the genera, species, and varieties, a fair proportion of which are illustrated in the eighty plates. Dr. Knuth recognises about 600 species, 259 of which are included in Geranium (to which belong our crane's-bills), while 232 belong to the great South African genus Pelargonium. Erodium—including our stork's-bill—has sixty species. These three great genera, with two less important, form the tribe Geranieæ, characterised by the twisted beak of the fruit—the remaining six genera, the fruit of which is not beaked, show greater diversity of floral structure, and are distributed among four small tribes.

Dr. Krause has elaborated for the same series of monographs the two families Goodeniaceæ and

Brunoniaceæ, members of the sympetalous series Campanulatæ. The former is a small but important Australian family with about 300 species; the latter is a monotypic group, restricted to a single species, *Brunonia australis*, a small perennial herb of somewhat daisy-like habit, widely distributed in Australia. It is interesting to note that the wealth of Australian material preserved in the great herbaria at the British Museum and Kew have supplied a large proportion of the material on which Dr. Krause's monographs are based.

A. B. R.

OUR BOOKSHELF.

Le Monde Polaire. By Otto Nordenskjöld. Traduit du Suédois par G. Parmentier and M. Zimmermann. Préface du Dr. J. Charcot. Pp. xi+324+xx plates. (Paris: Librairie Armand Colin, 1913.) Price, 5 francs.

Here is a handbook to the Polar regions, dealing, not with the exploration (of such there are plenty), but with the physical conditions of the regions, for which there was a vacant place. It is well for readers outside Scandinavia that it has been translated from the original Swedish into French: it might well be so into English. In a sense it treats the two polar regions as one, for it is comparative throughout, and for that reason the chapters are not arranged in a topographical sequence. Thus we have successive chapters devoted to Greenland, Iceland, and Spitsbergen; the next chapter deals with the Antarctic lands. The writer ranges widely enough to include among "sub-antarctic" lands Patagonia and Tierra del Fuego, the Falkland and other islands, and New Zealand, so far as that Dominion can be considered to lie under such conditions; correspondingly we find chapters on Arctic America (including Labrador), on Siberia, and on north-western Europe. Numerous photographs and sketch-maps accompany the text, and the French translation, which is prefaced by an introduction by Dr. J. Charcot, appears to have been excellently carried out by MM. G. Parmentier and M. Zimmermann. Dr. Nordenskiöld's chapters deal with the relief of land, ice conditions and effects, plant and animal distribution, climatic conditions and human life, and, where appropriate, with economic products.

Coast Erosion and Protection. By E. R. Matthews. Pp. xiv+147+33 plates. (London: C. Griffin and Co., Ltd., 1913.) Price 10*s.* 6*d.* net.

The author of this book writes with a practical knowledge of the subject with which he deals. He holds the position of Borough Engineer of Bridlington, and has constructed sea walls, promenades, and sea defence works of considerable magnitude, which are good examples of what such work should be.

The book follows much the same lines as that on the Destruction, Littoral Drift, and Protection of the Sea Coast, published by Messrs. Longman and Co. in 1902, but it does not treat the question of Littoral Drift with the same detail. As that book is now out of print, and the author of the present book has had the advantage of the large body of evidence laid before the Royal Commission on Coast Erosion, this work will be a valuable aid to engineers called upon to take charge of sea defence works.

The text is very fully illustrated with numerous plates showing the effect of waves on sea walls and cliffs in course of erosion, and illustrations of sea walls, groynes, and other sea defence works. As these latter are clearly drawn, and have the dimensions of the several parts marked on, they cannot fail to be of great practical use.

The book is divided into twelve chapters, the subjects dealt with being: wave action; erosion and accretion of the shore; types and designs of sea walls; groynes; reinforced concrete; and the action of sea water on cement and concrete.

In his account of the erosion of the Yorkshire coast, the author repeats the old fallacy of the material eroded from those cliffs being carried southward by the tides and being deposited on the Lincolnshire shore, and also as being carried up the Humber. This subject was fully dealt with in a paper on the source of warp in the Humber, read before the Geological Section of the Glasgow meeting of the British Association in 1901, in which it was shown that it is practically impossible for this eroded material to be carried so far southward; and samples of water taken on several occasions of the water entering the Humber on the flood tide give no indication of alluvial matter being carried into that river.

I Fenomeni Magnetici Nelle Varie Teorie Elettro-Magnetiche. Note Storico-Critiche. By Silvio Magrini. Pp. 165. (Bologna: Nicola Zanichelli, 1912.)

The scope of this interesting little volume, by an Italian author, is novel to English readers; at least, the present writer cannot recollect any other book devoted entirely to the history of the theory of magnetism. Oersted's fundamental discovery that an electric current gives rise to a magnetic field in surrounding space was important, not only as the starting point of electromagnetism, but also because, in the hands of Ampère, it became the basis of a theory designed to explain the physical nature of magnetism. Beginning at this point, the author passes in review the work of Poisson; Faraday's conception of lines of force, with its necessary recognition of the part played by the medium; the successful development of this idea in mathematical form by Maxwell; the theories of Weber and Ewing; the experimental work of Curie on diamagnetic and feebly magnetic substances; and finally, the modern electronic theory of magnetism as extended by Langevin, Weiss, Gans, and others. The various stages in the historical development are